

Proposed Item for Biobased Designation

The following biobased product information has been collected to support item designation by USDA for the Federal Biobased Product Preferred Procurement Program (FB4P). This summary reflects data available as of March 3, 2006.

Title: Cutting, Drilling, and Tapping Oils

Description: These products provide lubrication in the processing of various materials. They reduce the wear on the contact parts for cutting, drilling and tapping machinery helping these contact parts last longer.

Manufacturers Identified: 13 manufacturers producing Cutting, Drilling, and Tapping Oils have been identified through internet searches, manufacturer's directories, trade associations, and company submissions.

Industry Associations Investigated: The following industry associations have been investigated for member companies producing Cutting, Drilling, and Tapping Oils:

- Biobased Manufacturers Association
- United Soybean Board
- National Lubricating Grease Institute
- National Defense Industrial Association

Commercially Available Products Identified: Of the manufacturers identified, 33 Cutting, Drilling, and Tapping Oils are commercially available on the market.

Product Information Collected: Specific product information including company contact, intended use, biobased content, and performance characteristics have been collected on 23 Cutting, Drilling, and Tapping Oils.

Industry Performance Standards: Product information submitted by biobased manufacturers indicate that have typically been tested to the following industry standards:

- American Society for Testing and Materials #D1748-02 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet
- American Society for Testing and Materials #D-130 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test,
- American Society for Testing and Materials #D1401-02 Standard Test Method for Water Separability of Petroleum Oils and Synthetic Fluids
- American Society for Testing and Materials #D2266-01 Standard Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method)
- American Society for Testing and Materials #D2270-04 Standard Practice for Calculating Viscosity Index From Kinematic Viscosity at 40 and 100°C

- American Society for Testing and Materials #D2783-03 Standard Test Method for Measurement of Extreme-Pressure Properties of Lubricating Fluids (Four-Ball Method)
- American Society for Testing and Materials #D287-92(2000)e1 Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)
- American Society for Testing and Materials #D2982-98(2004) Standard Test Methods for Detecting Glycol-Base Antifreeze in Used Lubricating Oils
- American Society for Testing and Materials #D2983-04a Standard Test Method for Low-Temperature Viscosity of Lubricants Measured by Brookfield Viscometer
- American Society for Testing and Materials #D3233-93(2003) Standard Test Methods for Measurement of Extreme Pressure Properties of Fluid Lubricants (Falex Pin and Vee Block Methods)
- American Society for Testing and Materials #D-445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- American Society for Testing and Materials #D5864-00 Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components
- American Society for Testing and Materials #D-5985 Standard Test Method for Pour Point of Petroleum Products (Rotational Method),
- American Society for Testing and Materials #D-665 Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water;
- American Society for Testing and Materials #D-92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- American Society for Testing and Materials #D-97 Standard Test Method for Pour Point of Petroleum Products
- American Society for Testing and Materials #D56-05 Standard Test Method for Flash Point by Tag Closed Cup Tester
- Environmental Protection Agency #600/4-90-027 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms
- Environmental Protection Agency #560/6-82-003 Biodegradability

Samples Tested for Biobased Content: 12 samples of Cutting, Drilling, and Tapping Oils have been submitted to independent laboratories for biobased content testing as specified by ASTM standard D6866-04.

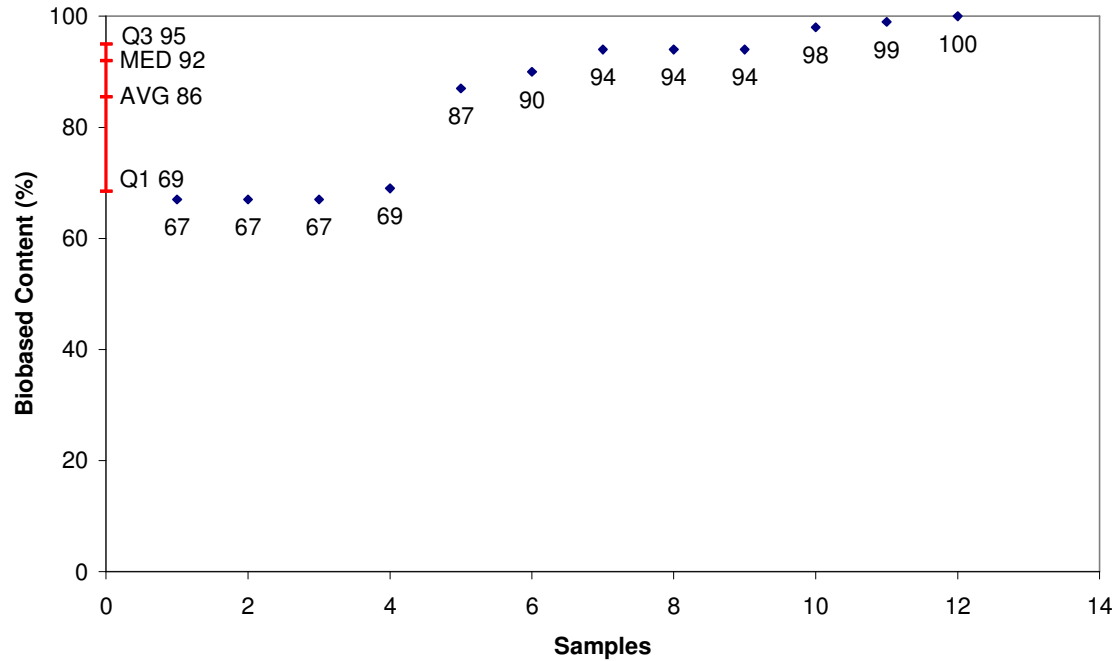
Biobased Content Data: Results from biobased content testing of Cutting, Drilling, and Tapping Oils indicate a range of content percentages from 67% minimum to 100% maximum biobased content as defined by ASTM D 6866-04. A detailed distribution of biobased content levels is included as Appendix A.

Products Submitted for BEES Analysis: Life-cycle cost and environmental effect data for 2 Cutting, Drilling, and Tapping Oils have been submitted to NIST for BEES analysis.

BEES Analysis: The life-cycle costs of the submitted Cutting, Drilling, and Tapping Oils range from \$20.00 minimum to \$152.15 maximum per usage unit. The environmental scores range from 0.0296 minimum to 0.0607 maximum. A detailed summary of the BEES results is included as Appendix B.

Appendix A - Biobased Content Data

Cutting, Drilling, and Tapping Oils

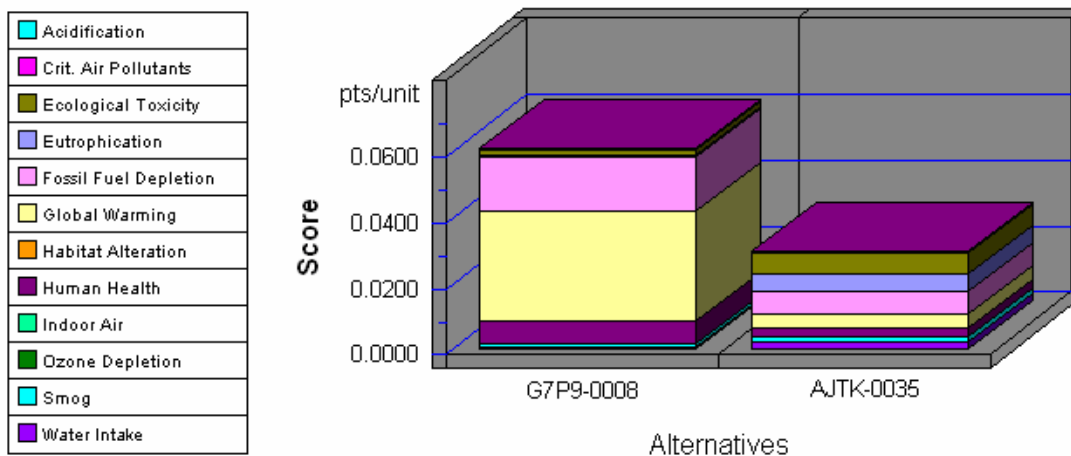


	Manufacturers Identified	Products Identified	C14	BEES
1	BP37	BP37-0015	67	
2	RDO8	RDO8-0002	67	
3	WF5U	WF5U-0024	67	
4	RGWJ	RGWJ-0024	69	
5	DQJV	DQJV-0002	87	
6	G7P9	G7P9-0008	90	yes
7	RGWJ	RGWJ-0026	94	
8	RGWJ	RGWJ-0003	94	
9	RGWJ	RGWJ-0015	94	
10	AJTK	AJTK-0025	98	
11	RDO8	RDO8-0029	99	
12	AJTK	AJTK-0035	100	yes

Appendix B - BEES Analysis Results

Functional Unit: 1 gallon of tapping oil

Environmental Performance

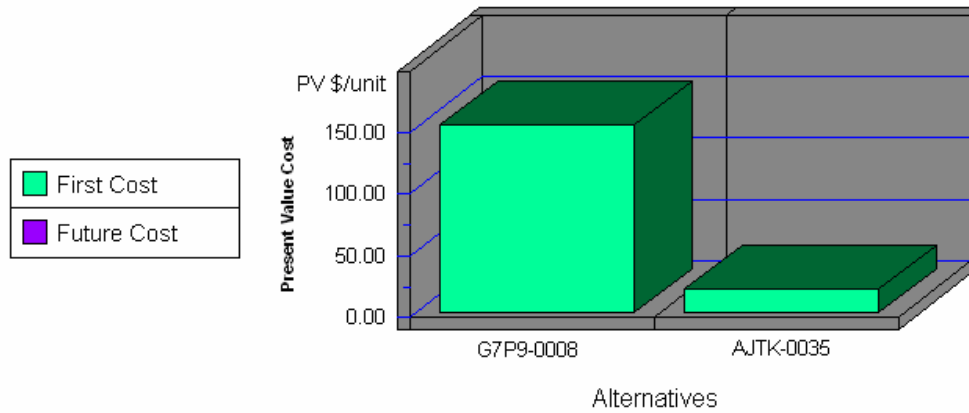


Note: Lower values are better

Category	G7P9-0008	AJTK-0035
Acidification--5%	0.0000	0.0000
Crit. Air Pollutants--6%	0.0002	0.0002
Ecolog. Toxicity--11%	0.0018	0.0067
Eutrophication--5%	0.0003	0.0051
Fossil Fuel Depl.--5%	0.0163	0.0070
Global Warming--16%	0.0334	0.0038
Habitat Alteration--16%	0.0000	0.0000
Human Health--11%	0.0068	0.0027
Indoor Air--11%	0.0000	0.0000
Ozone Depletion--5%	0.0000	0.0000
Smog--6%	0.0012	0.0017
Water Intake--3%	0.0007	0.0024
Sum	0.0607	0.0296

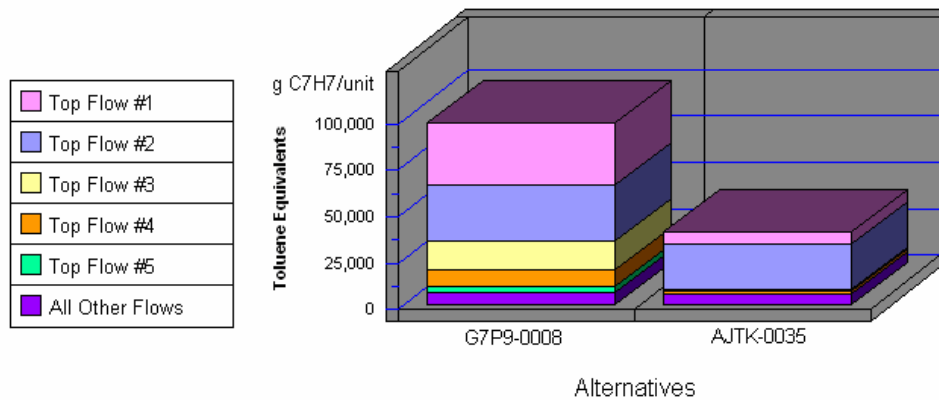
Appendix B (continued)

Economic Performance



*No significant/quantifiable durability differences were identified among competing alternatives. Therefore, future costs were not calculated.

Human Health by Sorted Flows*



Note: Lower values are better

Category	G7P9-0008	AJTK-0035
Cancer--(w) Arsenic (As3+, As5+	33,732.47	6,591.60
Cancer--(w) Phenol (C6H5OH)	29,746.78	23,893.64
Cancer--(a) Dioxins (unspecifie	16,159.50	1,481.93
Cancer--(a) Arsenic (As)	8,323.90	1,482.91
Cancer--(a) Ethylene Oxide (C2H	3,650.43	0.00
All Others	6,777.23	5,913.53
Sum	98,390.32	39,363.61

*Sorted by five topmost flows for worst-scoring product